segmentis ventralibus lateraliter punctatis, medio vix punctatis; lamina subgenitali conspicua, lævi, politissima, convexa. Femoribus anticis muticis. Larvis totis aterrimis. Long. corporis ♂ 37–45, ♀ 43 millim.; pronoti ♂ 10–13, ♀ $10\frac{1}{3}$; pronoti lat. ♂ $14\frac{1}{2}$–$17\frac{2}{3}$, ♀ $16\frac{1}{3}$; long. tegminum ♂ 29–53, ♀ $29\frac{1}{2}$.

*Hab.* Numerous adult and immature specimens of both sexes from the Nágá hills (*J. Butler* and *Godwin-Austen*), Brahmaputra valley (*A. W. Chennell*), and Dikrang valley (*Godwin-Austen*).

*Panesthia Saussurii*, n. sp.

♀. *P. mandarinea*, Saussure, Mélanges Orthopt. p. 100, pl. 3. fig. 23, non p. 40, pl. 1. fig. 25.

I have recently received from Johore in the Malay peninsula a fine series of specimens of *P. mandarinea*, none of which exhibit the least approach to the remarkable structure of the abdomen seen in the insect described and figured by De Saussure as the supposed female of it. The larvæ of *P. mandarinea*, moreover, are jet-black throughout, while those of *P. Saussurii* are deep black-brown symmetrically variegated with pale testaceous on every part of the body, including the legs, which are ringed, the antennæ, which are tipped, and the head, which is triply banded, with the same colour. A further reason for refusing to accept the insect figured by De Saussure on pl. 3 (*op. supra cit.*) as the female of the one represented on pl. 1 is that the latter is itself also a female, the sides of the pronotum in the true males of which are produced into huge curved horns, each separated from the broad semioval median lobe covering the head by a deep rounded emargination.

*Hab.* A single specimen of the male from Sikkim (*L. Mandelli*). This insect having been captured just prior to the last moult, the organs of flight are still in rudiment, and the pronotum is still non-emarginate.—*Journ. Asiatic Soc. Beng.* vol. xlv. part 2, 1876.

*On some Facts relating to the Nutrition of the Embryo in the Egg of the Fowl.* By M. C. Dareste.

My investigations in experimental teratogeny have enabled me to ascertain some facts with regard to the nutrition of the embryo in the egg.

If in the first days of incubation we remove the blastoderm with the portion of the vitelline membrane that covers it, and the layer of albumen lining this section of the vitelline membrane, and then, after separating the blastoderm from the vitelline membrane, coagulate the albumen by means of alcohol or hot water, we find that the albumen has completely disappeared above the embryo. There is here a vacant space in the form of a hollow cylinder, or rather a portion of a cone with a circular base. This perforation of the albumen is the more considerable in proportion to the distance from the commencement of incubation, and consequently to the space occupied by the embryo in the blastoderm.

This fact was observed by Agassiz; but I have been able to go further than that illustrious naturalist. In fact I have ascertained that this disappearance of the albumen is connected solely with the development of the embryo and of the vascular lamella, which, in its origin, is not distinguished from the embryo itself. The albumen disappears only above the circle formed by the vascular area; and its disappearance increases like this circle. If by chance, as I have observed in my experiments, the vascular area presents an elliptical form, the empty space produced by the disappearance of the albumen presents the form of an elliptical cylinder, or, more correctly, of a portion of a cone with an elliptical base. Thus during the early part of the development the formation of the vascular area is connected with the gradual disappearance of the layer of albumen corresponding to it on the other side of the vitelline membrane. On the contrary, nothing of the kind takes place in all that portion of the blastoderm which is beyond the vascular lamella and surrounds it.

This led me to think that the albumen necessary for the nutrition of the embryo does not assist in the nutrition of the blastoderm itself. I have verified this prevision by the examination of blastoderms which had developed without producing any embryo, and which nevertheless had covered almost the whole surface of the yelk. This fact I have several times observed in the course of my teratogenical studies. Under these circumstances the albumen forms a perfectly continuous layer above the blastoderm. We must therefore assume that the blastoderm derives its elements from the yelk, whilst at the commencement of incubation, and, at least, up to the period of the complete closure of the amnios, the embryo is developed at the expense of the albumen.

I may add that the ascertainment of the disappearance of the albumen is the process that I adopt in my investigations whenever I wish to know whether an embryo is being developed in an egg, a fact which the death and disorganization of the blastoderm do not always allow to be ascertained directly. There are, in fact, many circumstances under which the embryo perishes very early, quite at the commencement of the development; and if the egg is not opened until after the lapse of some days, it is often very difficult to find any appreciable traces of its existence. The disappearance or the preservation of the albumen furnishes a sure means of deciding as to the former existence of an embryo, and to decide whether the blastoderm has produced an embryo or whether it is one of those blastoderms without an embryo, the occurrence of which in my experiments I have just mentioned.—*Comptes Rendus*, Oct. 30, 1876, p. 836.

### *On the Structure and Organization of the* Polyphemidæ.

By Dr. C. Claus.

The structure of the body and limbs of the Polyphemidæ (*Bythotrephes, Polyphemus, Podon, Evadne*) may be referred in detail to the